WHAT IS CLAIMED IS;

1. A data relay processing method wherein, in the case that at least one piece of information is sent from respective terminals, among a piece of information on schedule of usage of transmission band, another piece of information on schedule of transmission band which is able to be assigned, another piece of information on schedule of a term where an transmission band is able to be assigned or exchanged, and another piece information on a necessary cost when a transmission band is assigned or exchanged, the sent information is held, and

wherein said respective schedules of said respective terminals are received, based on at least said information from another terminal which is previously held, said transmission band is reserved, assigned or exchanged or said communication price is determined.

2. A data relay processing method wherein, based on history information of the past processing record with respect to processes of assigning or exchanging of the transmission band between respective terminals and based on information with respect to said transmission band, said transmission band is reserved, assigned or exchanged or a communication price is determined.

3. A data relay processing method according to Claim 2, wherein said history information is announced in said respective terminals, and intervals between the announcements are

adjustable.

4. A data relay processing method according to Claim 2, wherein said history information is renewed at predetermined time intervals or in accordance with whether said assigning or exchanging are possible or not.

5. A data relay processing method wherein, in the case that there exists a transmission band utilized by reserving a transmission band, and a transmission band utilized without reserving a transmission band, information on usage frequency of the transmission band utilized by reserving said transmission band is defined by dependence information, and based on the dependence information and information with respect to said transmission band is reserved, assigned or exchanged or a communication price is determined.

6. A data relay processing method characterized in that, in the case that there exist a transmission band utilized by reserving the transmission band and a transmission band utilized without reserving the transmission band, information on usage frequency of said transmission band utilized by reserving the transmission band is defined as a dependence information, intervals of announcements of said dependence information is controlled said transmission band is reserved assigned or exchanged or communication price is determined.

7. A data relay processing method according to Claim 5, wherein said dependence information is renewed at predetermined

intervals.

8. A data relay processing method according to Claim 6, wherein said dependence information is renewed by predetermined intervals.

9. A data relay processing method wherein in the case that there exist more than two transmission resources respective that make either one of the processes of reserving, assigning or exchanging transmission bands possible, by utilizing information on goodness of fit exhibiting a possibility of being selected at least for each of said transmission resources that is able to be processed and information on deadline time of said selection, said transformation resources are selected or a communication price is adjusted.

10. A data relay processing method for controlling announcement intervals of route information for relaying data based on at least one piece of information among loads of terminals for carrying out data processing, a buffer capacity utilized for data processing, transmission quality, and available transmission band.

11. A data relay processing method for controlling announcement intervals of at least one piece of information, based on at least one piece of information among loads of terminals for carrying out data processing, a buffer capacity utilized for data processing, transmission quality, and available transmission band, among said loads of terminals for carrying

out data processing, said buffer capacity utilized for data processing, said transmission quality, and said available transmission band.

12. A data relay processing unit comprising: a transmission band management means wherein in the case that at least any one piece of information is sent from respective terminals, among a piece of information on schedule of usage of transmission band, another piece of information on schedule of transmission band which is able to be assigned, another piece of information on schedule of a term where an information band is able to be assigned or exchanged, and another piece information on a necessary cost when a transmission band is assigned or exchanged, said transmission band management means holding and managing the sent information; and

a transmission band reservation management means wherein in the case that said respective schedules of said respective terminals are received, based on at least said information from at least another terminal which is previously held by said transmission band management means, said transmission band reservation management means reserving, assigning or exchanging a transmission band or determining a communication price.

13. A program recording medium having programs recorded for making a computer carry out all of or a part of respective steps of a data relay processing method according to either one of Claims 1 to 10.

14. A data relay processing method according to any one of Claims 1 to 8 wherein terms of usage schedules of transmission bands according to relative time are appointed in order to describe a variety of schedules for reserving, assigning or exchanging said transmission bands or for determining a communication price.

15. A data relay processing method according to any one of Claims 1 to 8 wherein a starting point of time of usage schedule of a transmission band according to an offset time are appointed in order to describe a variety of schedules for reserving, assigning or exchanging said transmission bands or for determining a communication price.

16. A data relay processing method according to any one of Claims 1 to 8 wherein an extension of usage schedule of a transmission band according to an offset time are appointed in order to describe a variety of schedules for reserving, assigning or exchanging said transmission bands or for determining a communication price.

17. A data relay processing method according to Claim 2, wherein an achieved distance of at least one piece of information among said history information and said dependence information is controlled.

18. A data relay processing method according to Claim 5, wherein an achieved distance of at least one piece of information among said history information and said dependence information is controlled.

19. A data relay processing method according to Claim 6, wherein an achieved distance of at least one piece of information among said history information and said dependence information is controlled.

20. A data relay processing method according to Claim 10, wherein an achieved distance of at least one piece of information among said route information for relaying data, said loads of terminals for carrying out said data processing, said buffer capacity used for said data processing, said transmission quality, and said available transmission band is controlled.

21. A data relay processing method according to Claim 11, wherein an achieved distance of at least either one piece of information among said route information for relaying data, said loads of terminals for carrying out said data processing, said buffer capacity used for said data processing, said transmission quality, and said available transmission band is controlled.

22. A data relay processing method according to Claim 10, wherein an achieved distance of at least one piece of information among said route information for relaying data, said loads of terminals for carrying out said data processing, said buffer capacity used for said data processing, said transmission quality, and said available transmission band width is controlled based on at least one piece of information among said route information for relaying data, said loads of terminals for carrying out said data processing, said buffer capacity used for said data

processing, said transmission quality, and said available transmission band.

23. A data relay processing method according to Claim 11, wherein an achieved distance of at least one piece of information among said route information for relaying data, said loads of terminals for carrying out said data processing, said buffer capacity used for said data processing, said transmission quality, and said available transmission band is controlled based on at least one piece of information among said route information for relaying data, said loads of terminals for carrying out said data processing, said buffer capacity used for said data processing, said transmission quality, and said available transmission band.

24. A data relay unit comprising: packet classification rules for classifying packets, a packet classification means for classifying packets based on said packet classification rules, band reservation rules for managing rules for reserving transmission bands, and a band reservation means for reserving transmission bands based on said band reservation rules and the results of packet classification.

25. A data relay unit according to Claim 24 wherein said packet classification means classifies packets based on at least one or more pieces information among IP addresses, port numbers and protocol types.

26. A data relay unit according to Claim 24 wherein said band reservation rules describe available transmission bands

based on at least one piece of information among IP addresses, port numbers and protocol types.

27. A data relay unit according to Claim 24 comprising priority addition rules for managing rules for adding priority information, priority adding means for adding priority, priority processing rules for managing rules of the processing method of priority and a priority processing means for carrying out priority processing based on added priority.

28. A data relay unit according to Claim 27 wherein priority is added based on at least one or more pieces of information among priority of terminals, priority of each media, and priority of each frame.

29. An information drop method comprising:

an input step for inputting contents in which at least a plurality of types of priorities which are used when the contents are processed are added;

a correspondence making step for dividing said contents into packets of the Internet protocol and making priorities of a plurality of types of said contents correspond to a priority field of packets of said Internet protocol;

a step for classifying said packets to, which said priority is made to correspond, into drop classes having at least two or more different drop probabilities based on said priority that is made to correspond; and

a drop step for dropping said packet in accordance with

the network load based on said drop classes.

30. An information drop unit comprising:

an input means for inputting contents in which at least a plurality of types of priorities are added when the contents are processed;

a priority corresponding management means making step for dividing said contents into packets of the Internet protocol and making priorities of a plurality of types of said contents correspond to a priority field of packets of said Internet protocol;

a classification means for classifying said packets to which said priority is made to correspond, into drop classes having at least two or more different drop probabilities based on said priority that is made to correspond; and

a drop means for dropping said packet in accordance with the network load based on said drop classes.

31. An information drop method comprising:

an input step for inputting contents in which at least a plurality of types of priorities are added when the contents are processed;

a correspondence making step for dividing said contents into packets of the Internet protocol and making priorities of a plurality of types of said contents correspond to a priority field of packets of said Internet protocol;

a first classification step for classifying said packets

to which said priority is made to correspond, into first drop classes according to previously assigned rules;

a second classification step for classifying packets classified as such, into second drop classes having at least two or more different drop probabilities provided in said first drop class, based on said priority made to correspond; and

a drop step for dropping said packets in accordance with the network loads based on said first and second drop classes.

32. An information drop unit comprising:

an input means for inputting contents in which at least a plurality of types of priorities are added when the contents are processed;

a priority corresponding management means for dividing said contents into packets of the Internet protocol and making priorities of a plurality of types of said contents correspond to a priority field of packets of said Internet protocol;

a first drop class management means for classifying said packets to which said priority is made to correspond, into first drop classes according to previously assigned rules;

a second drop class management means for classifying packets classified as such, into second drop classes having at least two or more different drop probabilities provided in said first drop class based on said priority made to correspond; and

a drop means for dropping said packets in accordance with the network loads based on said first and second drop classes.

33. An information drop method according to Claim 29, wherein that a plurality of types of priorities of said contents in said priority corresponding management means are an arbitrary combination of a processing priority added by a type of stream of said contents, a processing priority added by types of frames of said contents or by the set unit of a predetermined size of frames, a priority added by types of terminals.

34. An information drop method according to Claim 31, characterized in that a plurality of types of priorities of said contents in said priority corresponding management means are an arbitrary combination of a processing priority added with a type of stream of said contents, a processing priority added by types of frames of said contents or by the set unit of a predetermined size of frames, a priority added with types of terminals, and a priority added with types of terminals.

35. An information drop unit according to Claim 30, characterized in that a plurality of types of priorities of said contents in said correspondence making step are an arbitrary combination of a processing priority added with a type of stream of said contents, a processing priority added by types of frames of said contents or by the set unit of a predetermined size of frames, and a priority added with types of terminals.

36. An information drop unit according to Claim 32, characterized in that a plurality of types of priorities of said contents in said correspondence making step are an arbitrary

combination of a processing priority added with a type of stream of said contents, a processing priority added by types of frames of said contents or by the set unit of a predetermined size of frames, and a priority added with types of terminals.

37. An information drop method characterized by comprising:

an input step for inputting contents in which at least a plurality of types of priorities are added when the contents are processed;

a correspondence making step for dividing said contents into packets of the Internet protocols, and for making a plurality of types of priorities of said contents correspond individually to a priority field of packets of said Internet protocol independently;

a first classification step for classifying said packets, to which said priority correspond is made correspond, into a first drop class based on one of said plurality of types of priorities being made to correspond;

a second classification step for classifying packets, which has been classified in such a way, into a second drop class having at least two or more different drop probabilities provided in said first drop class based on other priorities than said plurality of types of priorities which have been made to correspond;

a drop step for dropping said packets according to the

network loads based on said first and second drop classes.

38. An information drop method according to claim 37 characterized in that said plurality of types of priorities are an arbitrary combination of the processing priority added with types of streams of said contents, the processing priority added with types of frames of said contents or by the set unit of a predetermined size of frames, and priority of terminals, and types of priorities utilized in said first class and said second class steps are said streams.

39. An information drop unit characterized by comprising:

an input means for inputting contents in which at least a plurality of types of priorities are added when the contents are processed;

a priority corresponding management means making step for dividing said contents into packets of the Internet protocols, and for making a plurality of types of priorities of said contents correspond individually to a priority field of packets of said Internet protocol independently;

a first drop class management means for classifying said packets, to which said priority correspond is made correspond, into a first drop class based on one of said plurality of types of priorities being made to correspond;

a second drop class management step for classifying packets, which has been classified in such a way, into a second drop class having at least two or more different drop probabilities provided

in said first drop class based on other priorities than said plurality of types of priorities which have been made to correspond;

a drop means for dropping said packets according to the network loads based on said first and second drop classes.

40. An information drop method according to claim 39 characterized in that said plurality of types of priorities are an arbitrary combination of the processing priority added with types of streams of said contents, the processing priority added with types of frames of said contents or by the set unit of a predetermined size of frames, and priority of terminals, and types of priorities utilized in said first class and said second class steps are said streams.